Amendments to the Claims

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (currently amended) A mass spectroscope comprising:

an ion source for generating ions,

a mass spectrometry portion for analyzing the ions,

an ion retention portion arranged between the ion source and the mass spectrometry portion for storing, cooling ~~the ions~~ and dissociating the ions,

a gas supply connected to the ion retention portion for supplying a gas to the ion retention portion,

flow adjusting means disposed between the ion retention portion and the gas supply for adjusting a flow of the gas supplied to the ion retention portion, and

control means connected to the flow adjusting means for controlling the flow adjusting means to maintain an inner pressure of the ion retention portion according to operation modes at the ion retention portion, said control means operating the flow adjusting means to introduce the gas into the ion retention portion at a retention operation in which the ions are stored in the ion retention portion so that the inner pressure of the ion retention portion in the retention operation is higher than those in introducing and discharging operations in which the ions are introduced into the ion retention portion and the ions are discharged from the ion retention portion, respectively.

2. (currently amended) A mass spectroscope according to claim 1, wherein said operation modes include ~~a~~ the introducing operation in which the ~~ion is~~ ions are introduced from the ion source into the ion retention portion, ~~a~~ the retention operation in which the ~~ion is~~ ions are stored, cooled and dissociated in the ion retention portion, and ~~a~~ the discharging operation in which the ~~ion is~~ ions are discharged from the ion retention portion to the mass spectrometry portion, said control means controlling the flow

adjusting means to introduce the gas only at the retention operation for cooling ~~so that the gas pressure of the ion retention portion in the retention operation is higher than those in the introducing and discharging operations~~.

3. (original) A mass spectroscope according to claim 2, wherein said flow adjusting means is a pulse valve for quickly opening and closing gas flow from the gas supply.

4. (currently amended) A method for analyzing ions, comprising:

generating the ions in an ion source,

introducing the ions from the ion source into an ion retention portion,

increasing a pressure in the ion retention portion by introducing a gas into the ion retention portion only while the ions are retained in the ion retention portion, and

discharging the ions from the ion retention portion to a mass spectrometry portion for analyzing the ~~ion~~ ions after the pressure in the ion retention portion is decreased.

5. (currently amended) A method for analyzing ions according to claim 4, wherein said gas is introduced into the ion retention portion ~~only while the ions are retained in the ion retention portion~~ after the ions are introduced into the ion retention portion and before the ions are discharged from the ion retention portion.

6. (currently amended) A method for analyzing ions according to claim ~~4~~ 5, wherein said gas is maintained at a pressure about 6 x 10^{-3} [Pa] in the ion retention ~~operation~~ portion when the gas is introduced.

7. (new) A method for analyzing ions according to claim 6, further comprising evacuating the gas in a vacuum chamber containing said ion retention portion so that a flow of the gas substantially balances with an evacuating speed of a vacuum pump in the vacuum

chamber.

8. (new) A method for analyzing ions according to claim 7, wherein when the gas is not introduced into the ion retention portion, the pressure in the ion retention portion is maintained at about 1 x 10^{-3} [Pa].